

MICROFILMED
JUL 3 1984

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

293-A
344

MAR-23-15.67
WYA-23-0.00

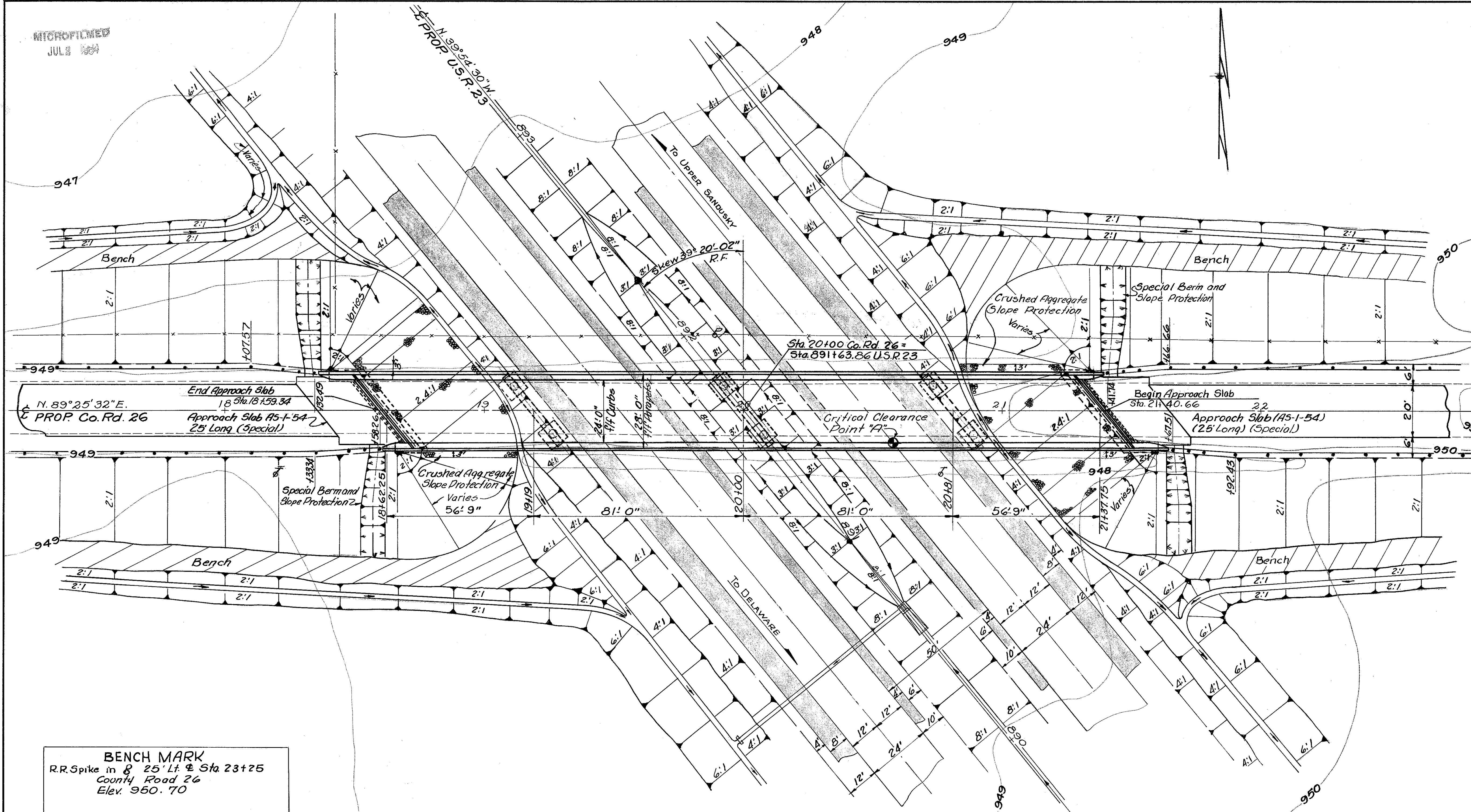
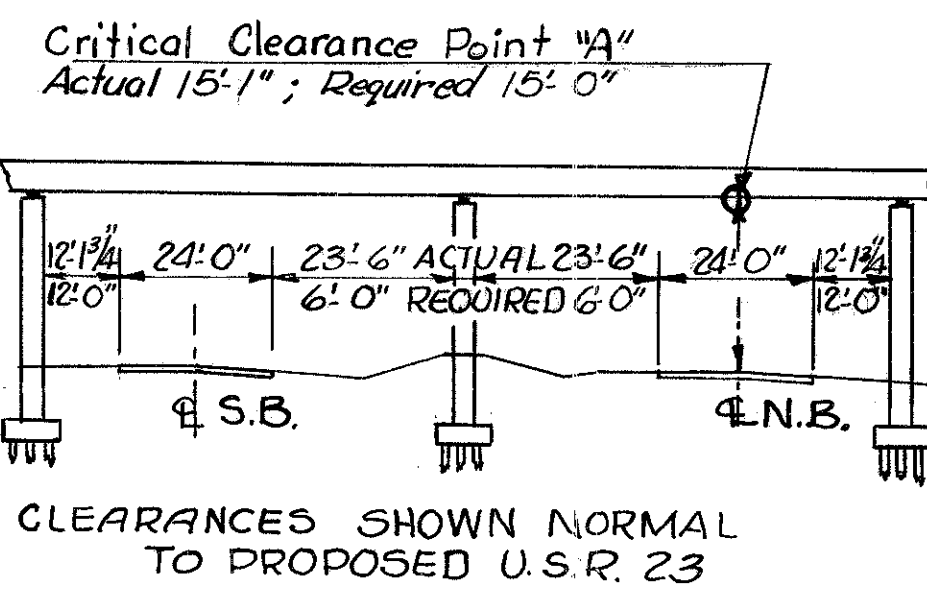
PROPOSED BRIDGE DATA

TYPE: Continuous Steel Beam with reinforced concrete deck and substructure.
 SPANS: 56'-9" - 81'-0" - 81'-0" - 56'-9"
 ROADWAY: 24'-0" w/ 2'-0" Safety Curbs
 LOAD FREQUENCY: CF 130 (57)
 SKEW: 39° 20' 00" R.F.
 APPROACH SLABS: A5-1-54 (25' Long) (Special)
 RAILING: Aluminum rail and supports and concrete parapet.
 WEARING SURFACE: 1" Monolithic Concrete.
 ALIGNMENT: Tangent.

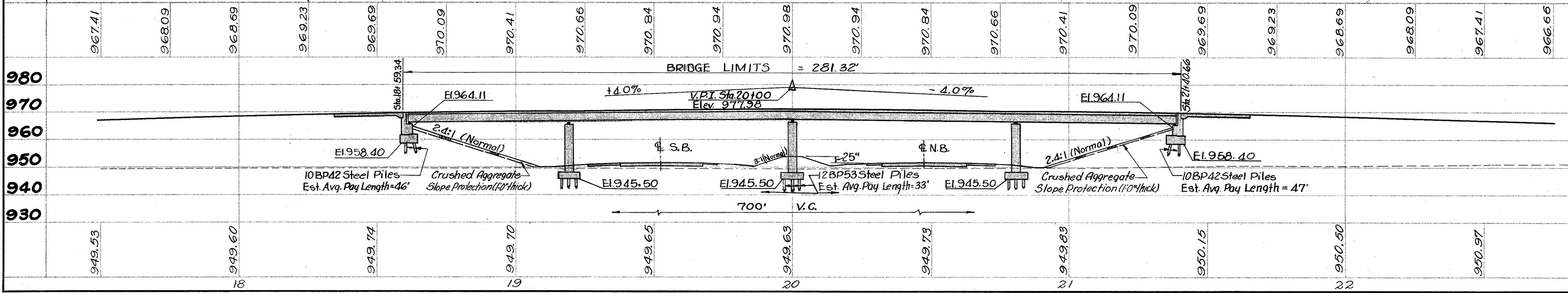
TRAFFIC 1986

	Co. Rd. 26 USR 23	
AVERAGE DAILY TRAFFIC		
Total Vehicles	460	
Equiv. Pass. Vehicles	520	24,070

CLEARANCE DIAGRAM



BENCH MARK
 R.R. Spike in S 25' Lt. of Sta. 23+25
 County Road 26
 Elev. 950.70



BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
 CONSULTING ENGINEERS
 249 S. PAINT ST. CHILLICOTHE, OHIO

SITE PLAN
BRIDGE No. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26

MARION COUNTY U.S.R. 23
 STA. 891+63.86

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
80P	E.P.S.	E.P.S.	P.J.M.	NW	NW	8/25/66

FED. RD. DIVISION	STATE	PROJECT
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~GENERAL NOTES~

REFERENCE shall be made to Standard Drawings BR-1-65 (Sheet 1) revised 11-24-65, RB-1-55 revised 2-2-59, SD-1-65 dated 11-8-65, AS-1-54 revised 8-10-65, and Supplemental Specifications 808 revised 7-13-67, 811 dated 7-7-67, 825 dated 7-1-67, and 828 dated 7-1-67.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

- Design Loading : OF-130-(57)
- Concrete Class C : basic unit stress 1,333 p.s.i.
- Concrete Class E : basic unit stress 1,133 p.s.i.
- Structural Steel : ASTM A36, basic unit stress-20,000 p.s.i.
- Reinforcing Steel : ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress-20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the sub-grade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piles driven.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Section 50705 is not less than the following value for a pile hammer of the indicated energy rating.

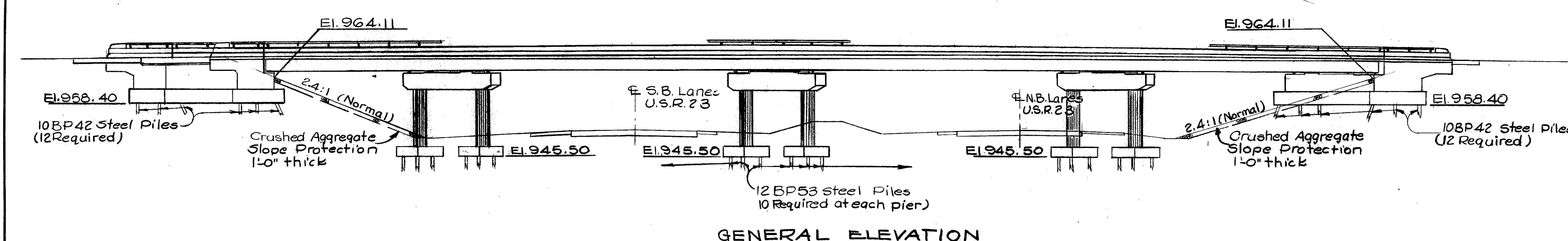
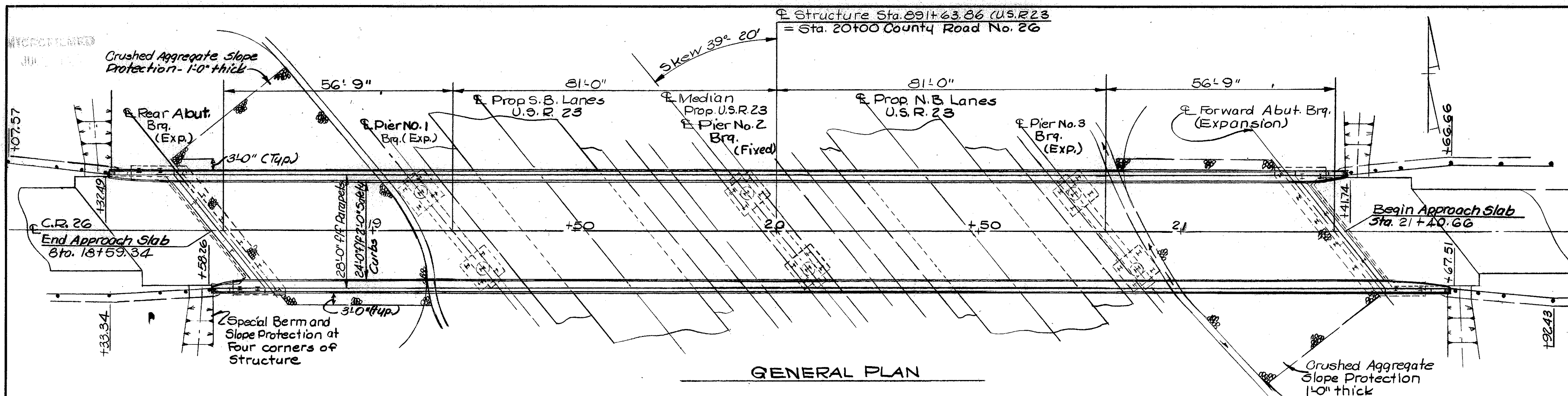
- For the abutment piles
 - 28 tons per pile using a 7,000 ft. lb. hammer
 - 28 tons per pile using an 11,000 ft. lb. hammer
 - 28 tons per pile using a 15,000 ft. lb. or greater hammer.

- For the pier piles (with a hammer of not less than 11,000 ft. lbs. per blow.)
 - 50 tons per pile using an 11,000 ft. lb. hammer
 - 50 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 28 tons per pile for the abutment piles and 50 tons per pile for the pier piles.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to co-operate by arranging their work in such a manner that inconvenience to either will be held to a minimum.



ESTIMATED QUANTITIES				ABUTMENTS	PIERS	SUPER.	GENERAL	AS BUILT
ITEM	QUANTITY	UNIT	DESCRIPTION					
503	317	Cu. Yds.	Unclassified Excavation	219	98			
505	Lump	Sum	First Test Pile				Lump	
507	1,120	Lin. Ft.	Steel Piles 10BP42	1,120				
507	1,000	Lin. Ft.	Steel Piles 12BP53		1,000			
509	94,811	Lbs.	Reinforcing Steel	11,772	17,392	65,647		
511	261	Cu. Yds.	Class "C" Concrete, Superstructure			261		
511	67	Cu. Yds.	Class "C" Concrete, Pier Caps and Columns		67			
511	84	Cu. Yds.	Class "E" Concrete, Abutments above Footings	84				
511	108	Cu. Yds.	Class "E" Concrete, Footings	70	38			
513	213,000	Lbs.	Structural Steel			213,000		
514	213,000	Lbs.	Field Painting of Structural Steel			213,000		
517	612.50	Lin. Ft.	Bridge Railing, Type 1.	56.33		556.17		
518	26	Cu. Yds.	Porous Backfill	26				
518	64	Lin. Ft.	6" Perforated, Helical C.M.P. including Specials, 707.06	64				
518	48	Lin. Ft.	6" Non-Perforated, Helical C.M.P., 707.06	48				
518	12	Each	Scuppers, including supports			12		
601	512	Sq. Yds.	Crushed Aggregate Slope Protection				512	
808	261	Units	Water-reducing, Set-retarding Admixture			261		
825	1,112	Sq. Yds.	Concrete Surface Treatment	52		1060		
828	62	Lin. Ft.	Joint Sealer (enddam)			62		

BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
Consulting Engineers
249 S. Paint Street
Chillicothe, Ohio

GENERAL PLAN & ELEVATION
EST. QUANTITIES & GEN. NOTES
BRIDGE NO. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26
MARION COUNTY
STA. 891+63.86 U.S.R. 23

SCALE: _____ DATE: _____

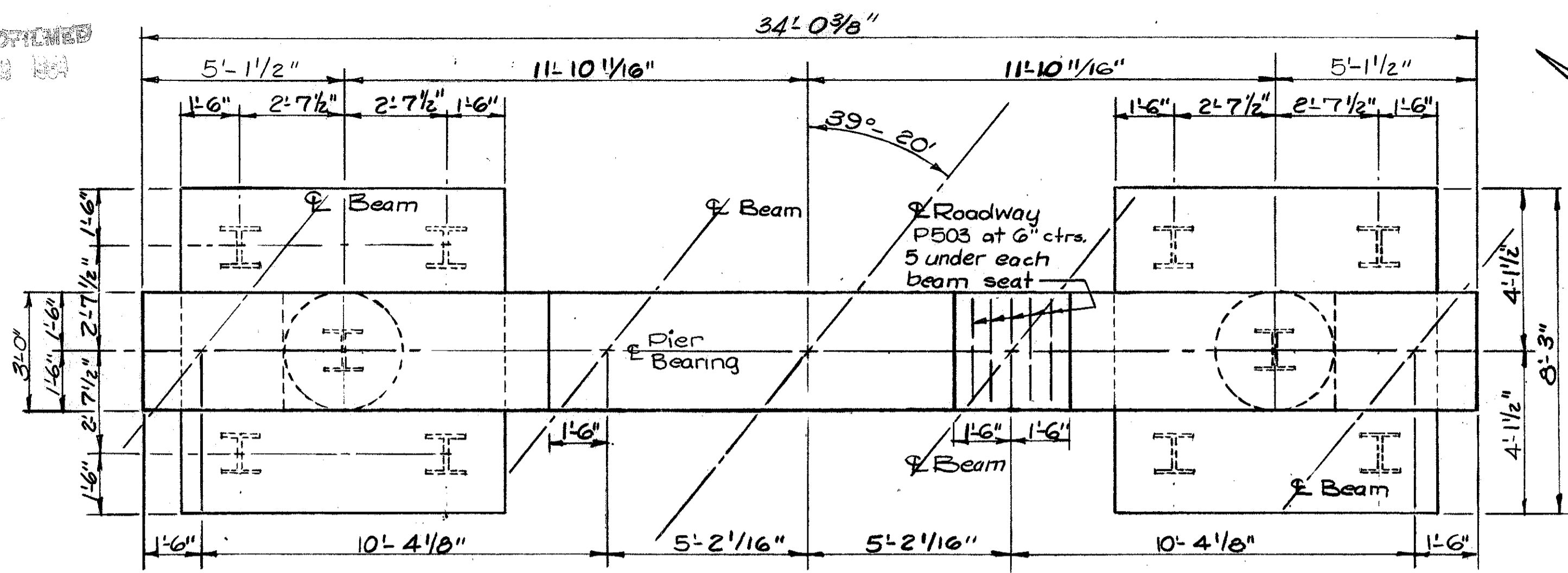
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
F.H.S.	D.J.M.		G.P.S.	P.M.L.	8/25/66	

MICROFILMED
JUL 3 1968

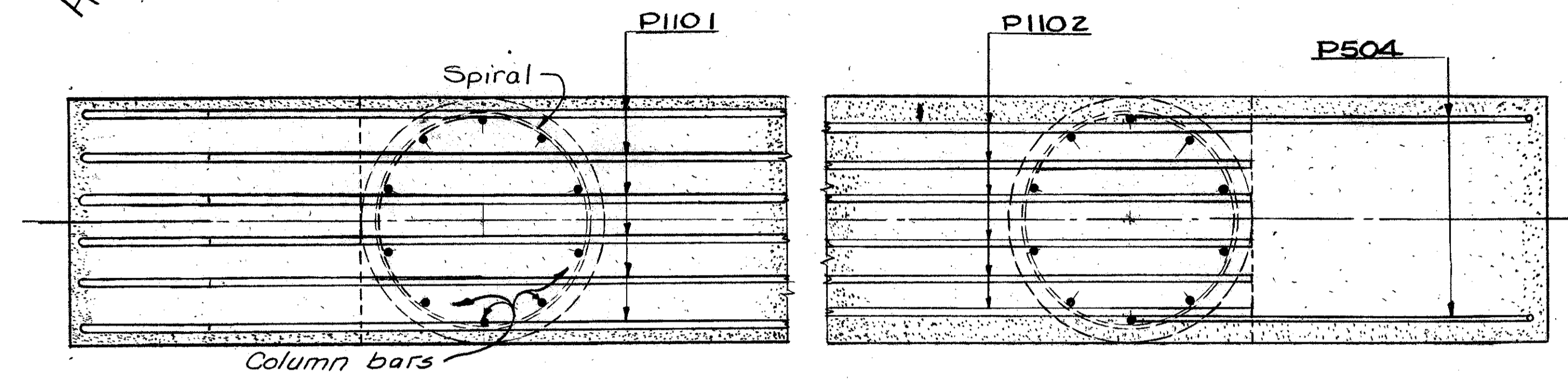
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

293-E
344

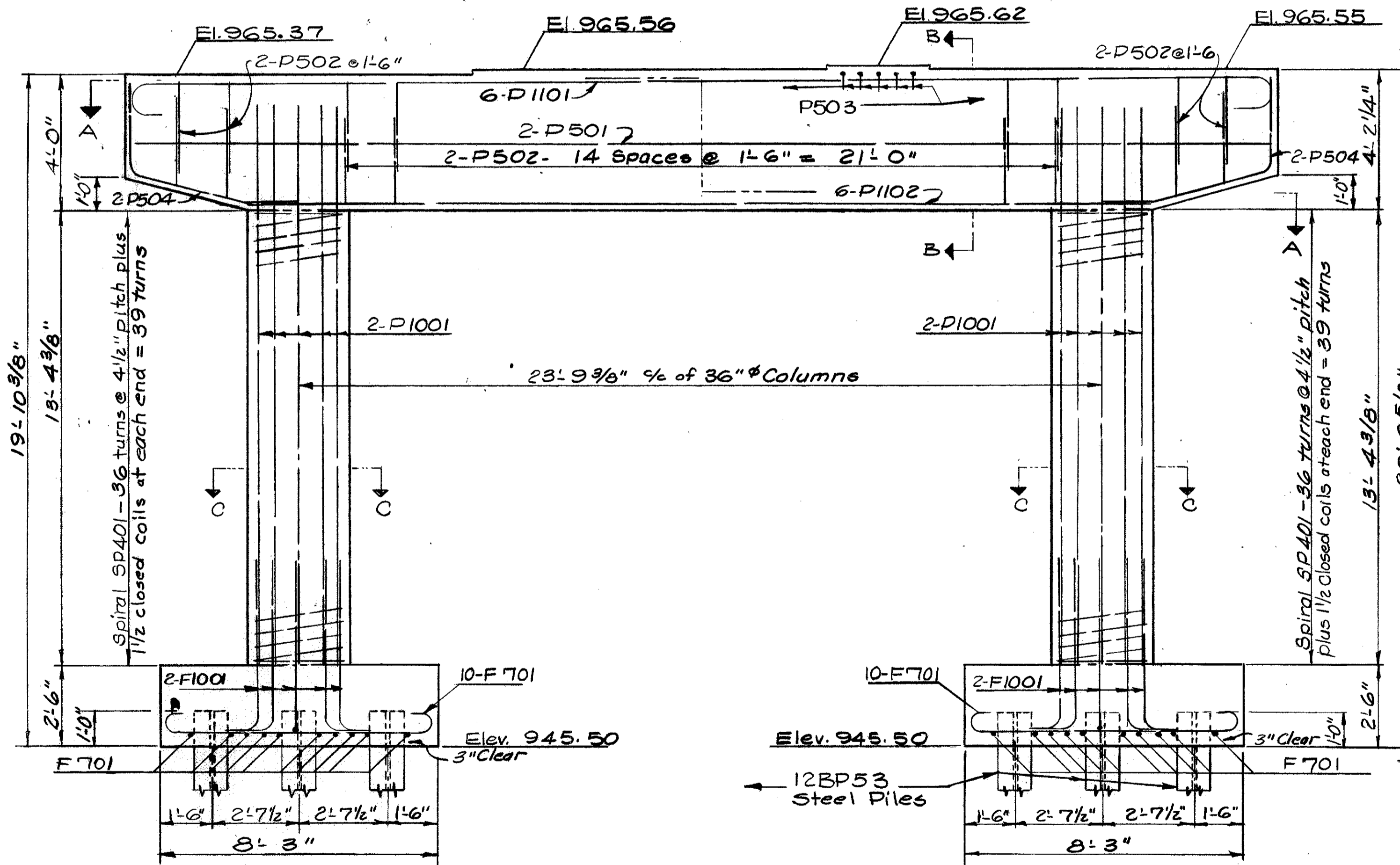
MAR-23-15.67
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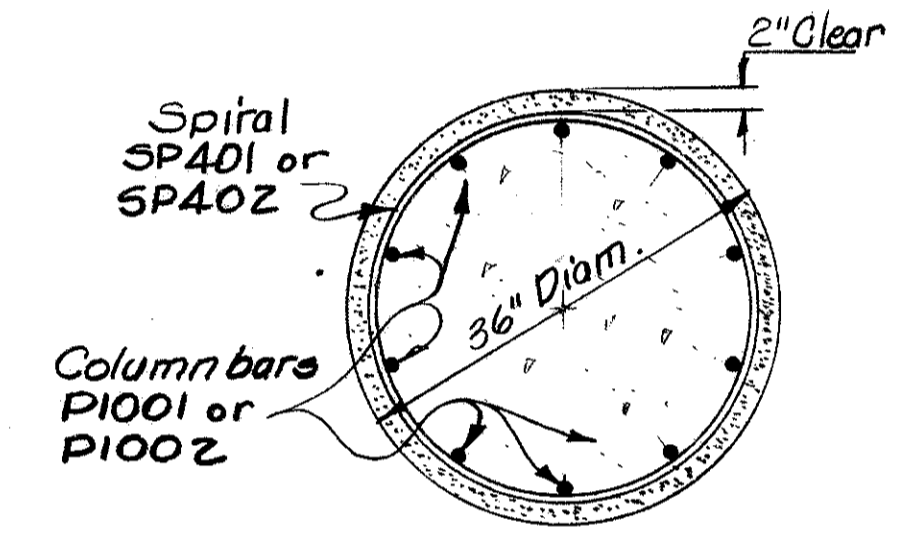
PLAN - PIER NO. 1



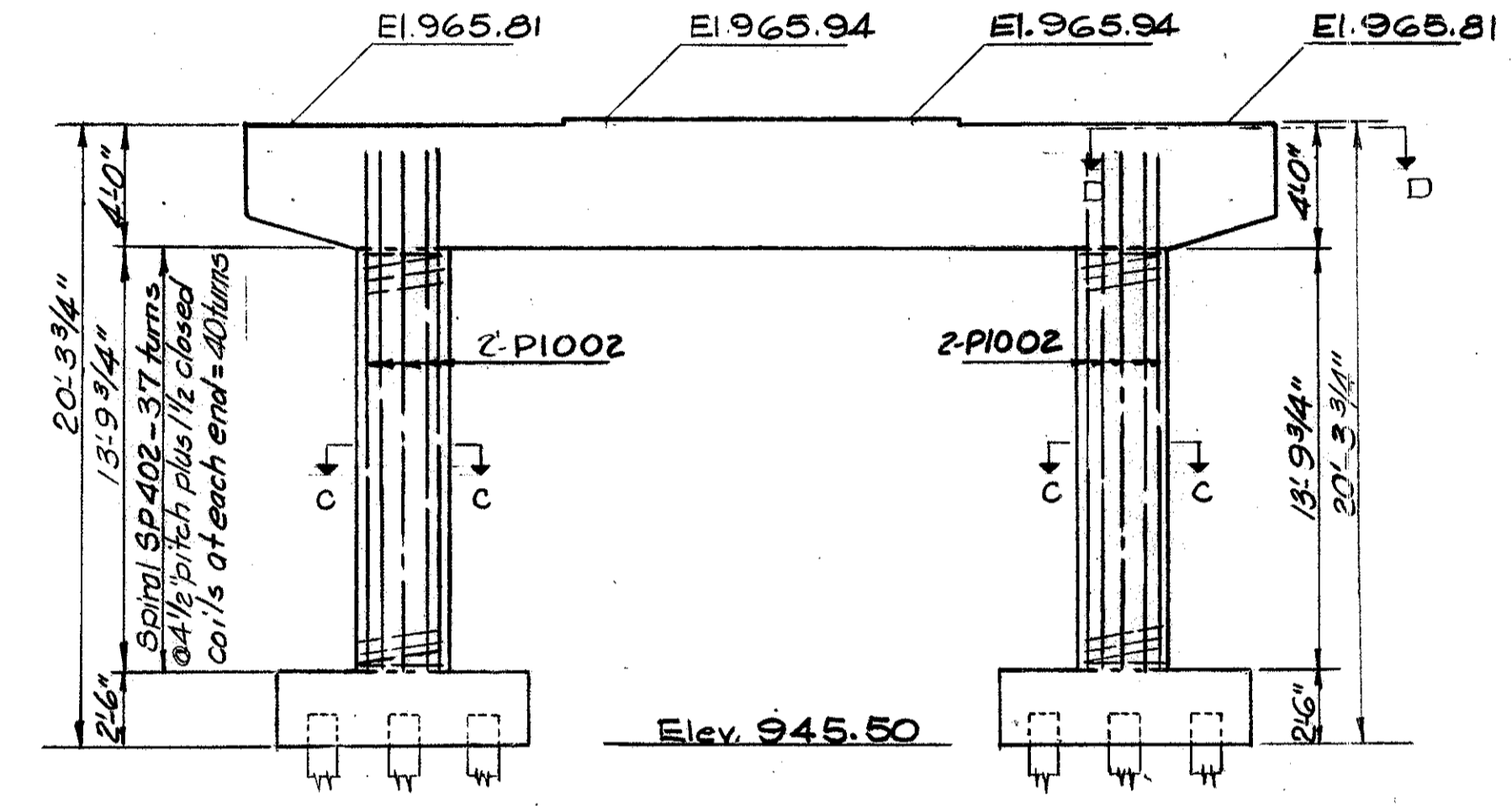
SECTION A-A



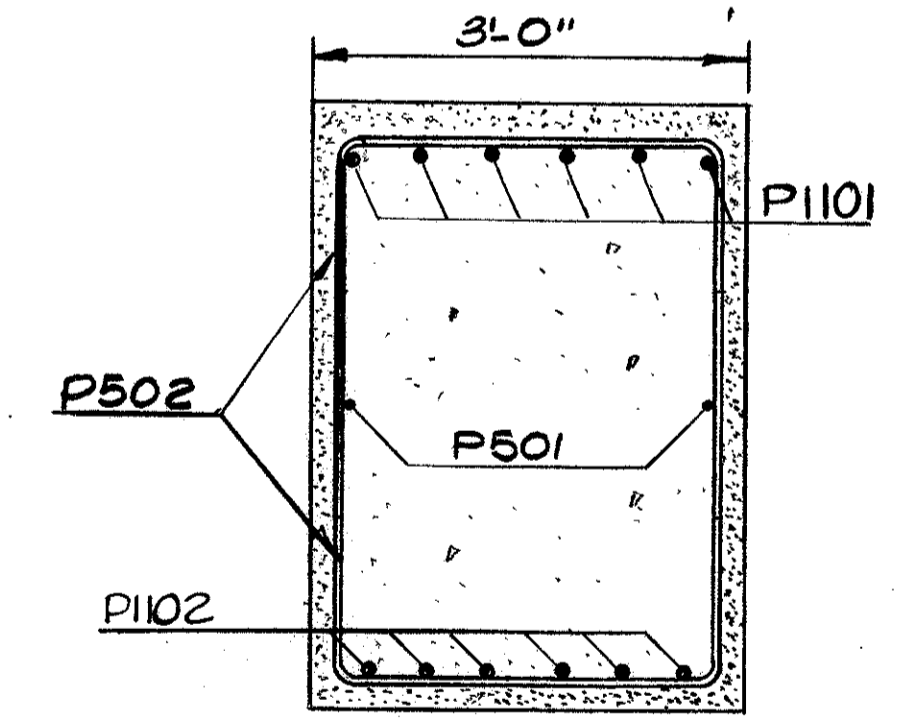
ELEVATION PIER NO. 1



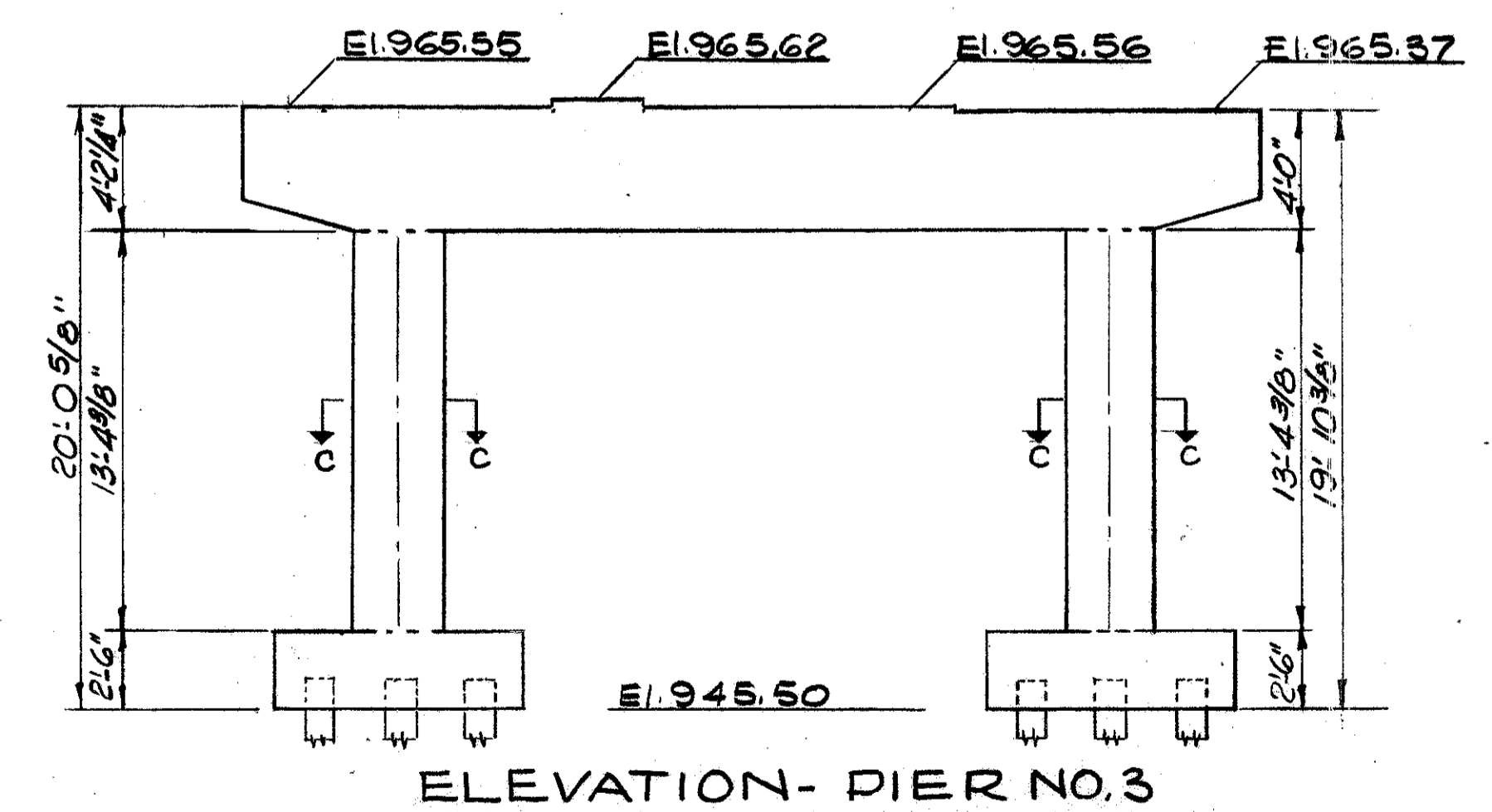
SECTION C-C



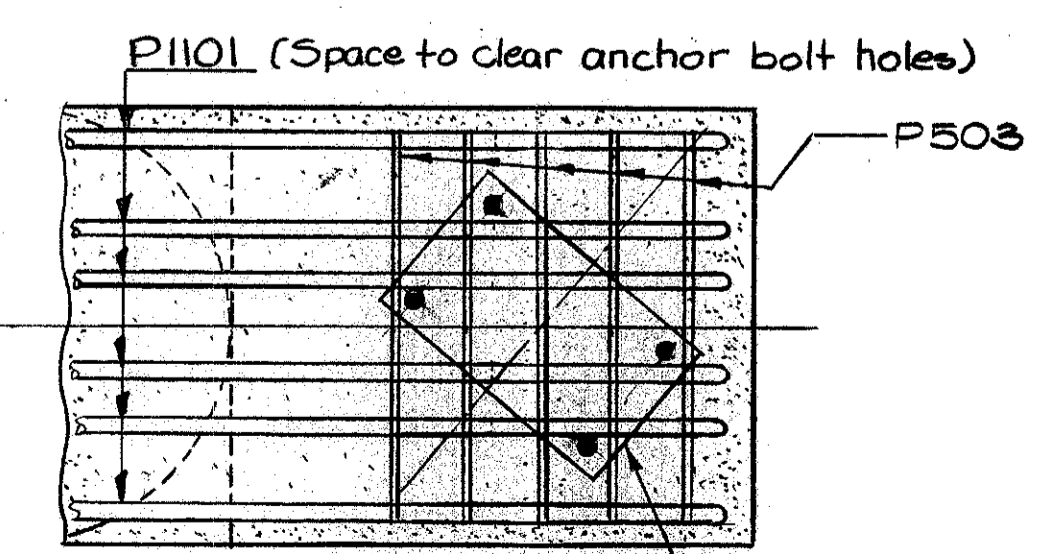
ELEVATION - PIER NO. 2



SECTION B-B



ELEVATION - PIER NO. 3



SECTION D-D

~ NOTES ~

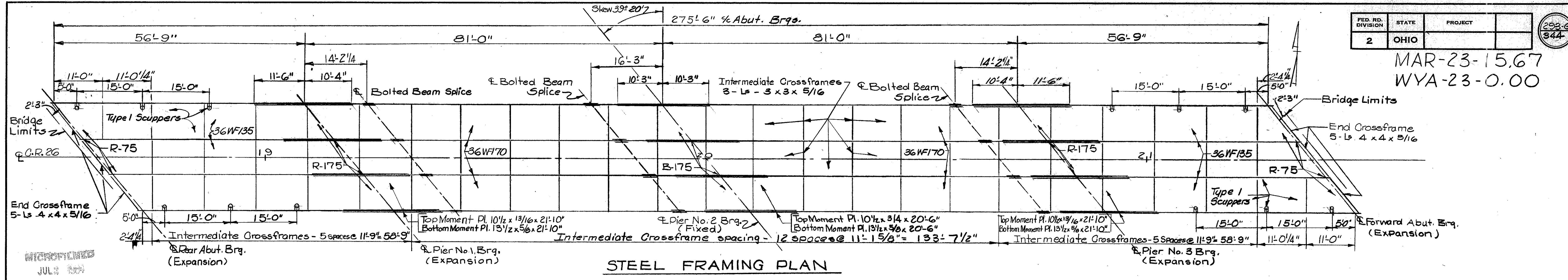
All details, dimensions and reinforcing steel not shown on Pier No 2 and 3 are identical to Pier No. 1.

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat on Pier No. 2, so as to avoid interference with the drilling of anchor bolt holes.

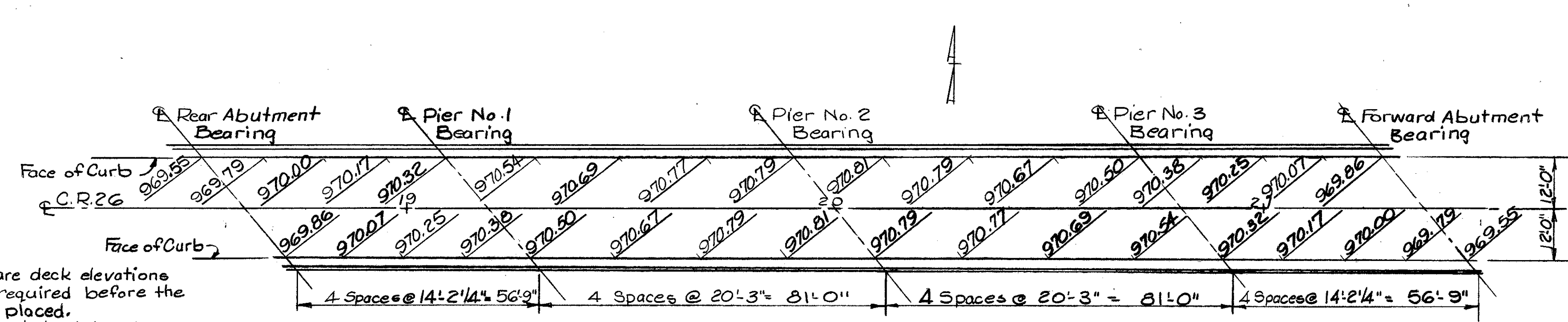
CONCRETE shall be Class 'C' for caps and columns and Class 'E' for footings

BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD. Consulting Engineers 249 S. Paint Street Chillicothe, Ohio					
PIER DETAILS					
BRIDGE NO. MAR-23-1693 U.S.R. 23 UNDER COUNTY ROAD 26					
MARION COUNTY U.S.R. 23 STA. 891+63.86					
SCALE	DATE	DESIGNED	DRAWN	TRACED	CHECKED
		F.H.S.	P.J.M.		

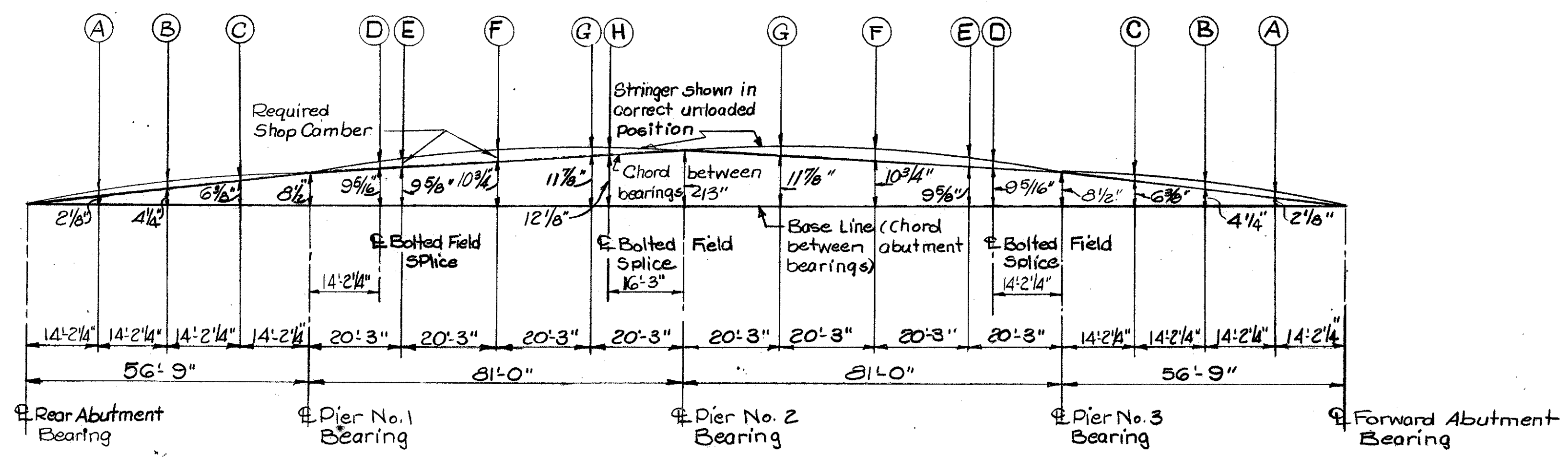
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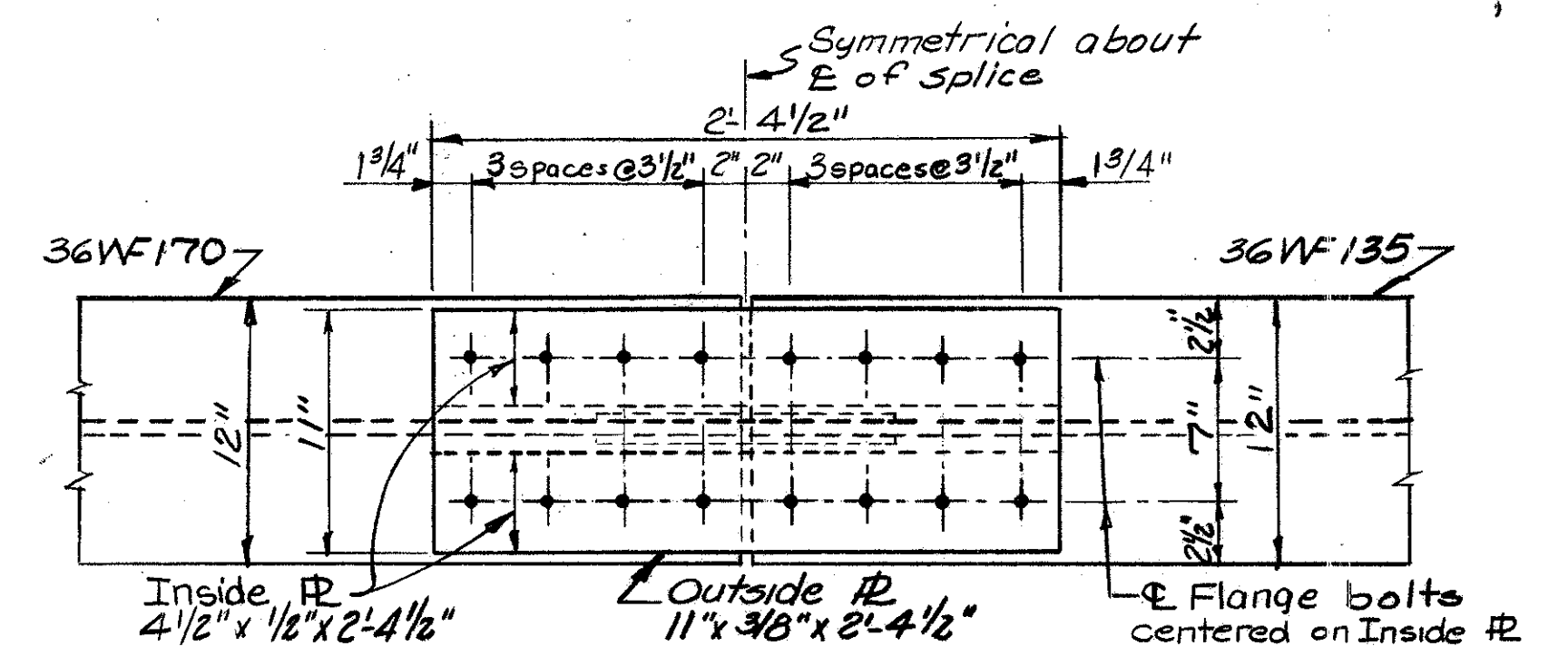
STEEL FRAMING PLAN



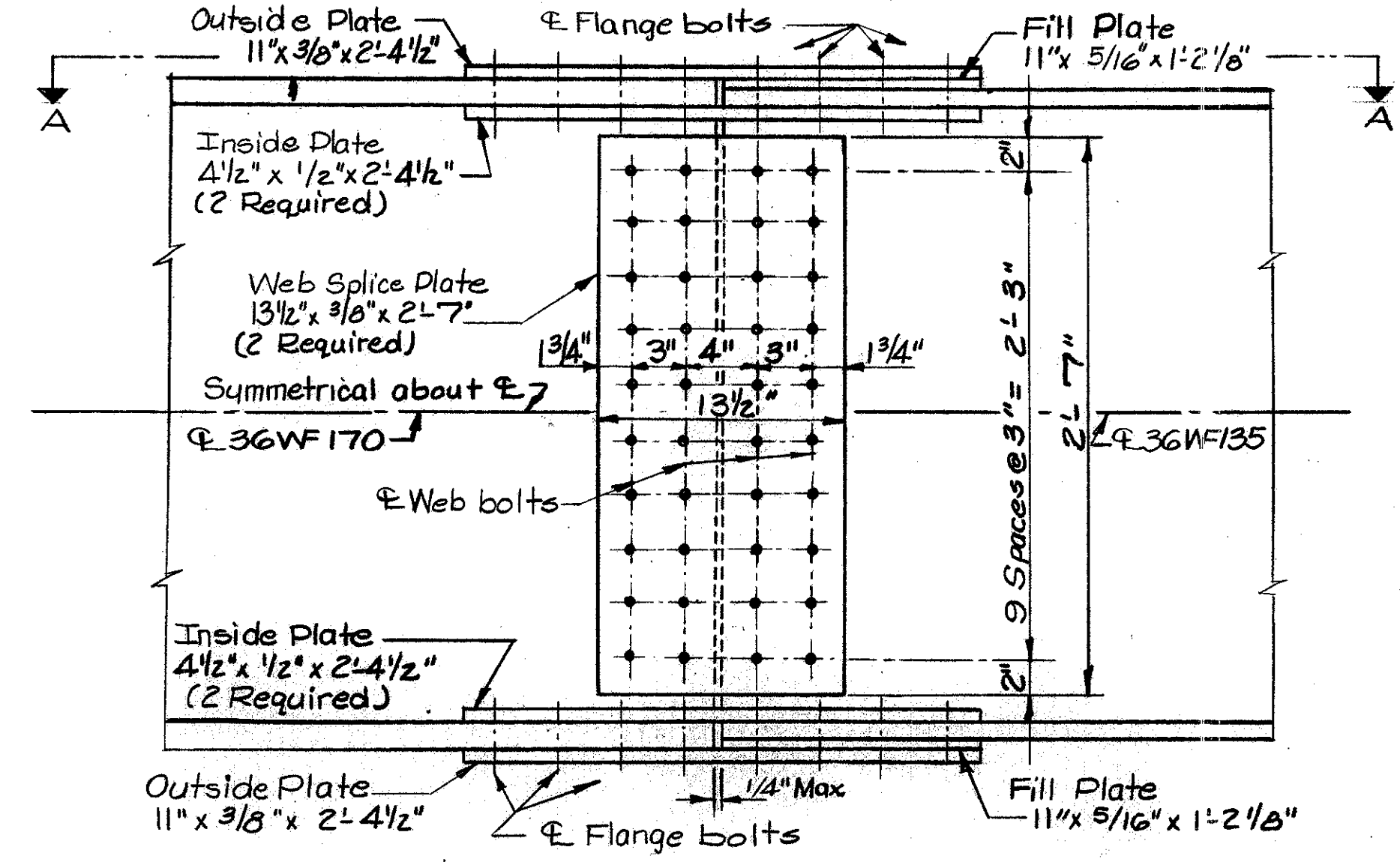
ELEVATION DIAGRAM



FIT-UP DIAGRAM



VIEW A-A



BOLTED BEAM SPlice DETAIL

	SPANS NO. 1 & 4				SPANS NO. 2 & 3			SPAN NO. 2
	1/4 Point A	Center Point B	3/4 Point C	Splice Point D	1/4 Point E	Center Point F	3/4 Point G	Splice Point H
Deflection Due to Weight of Steel	0.04"	0.04"	0.01"	0.05"	0.08"	0.13"	0.07"	0.05"
Deflection Due to Remaining Dead Load	0.22"	0.23"	0.07"	0.23"	0.35"	0.56"	0.31"	0.22"
Adjustment Required for Vertical Curve	0.41"	0.55"	0.41"	0.65"	0.84"	1.12	0.84"	0.72"
Required Shop Camber	1 1/16"	1 3/16"	1/2"	1 5/16"	1 1/4"	1 3/16"	1 1/4"	1"

NOTE:
For additional details and notes see Std. Dwg. SD-1-65
For bolted splice details 36WF170 beam to 36WF135 beam, (in 2nd span) see Std. Dwg. SD-1-65,
For additional notes see "GENERAL NOTES"

BARRETT, CARGO, WITHERS AND ASSOCIATES, LTD.
Consulting Engineers
249 S. Paint Street
Chillicothe, Ohio

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAR-23-1693
U.S.R. 23 UNDER COUNTY ROAD 26
MARION COUNTY U.S.R. 23
STA. 891+63.86

DESIGNED	DRAWN	TRACED	CHECKED	REV. ED	DATE	REVISED
F.H.S.	P.M.					

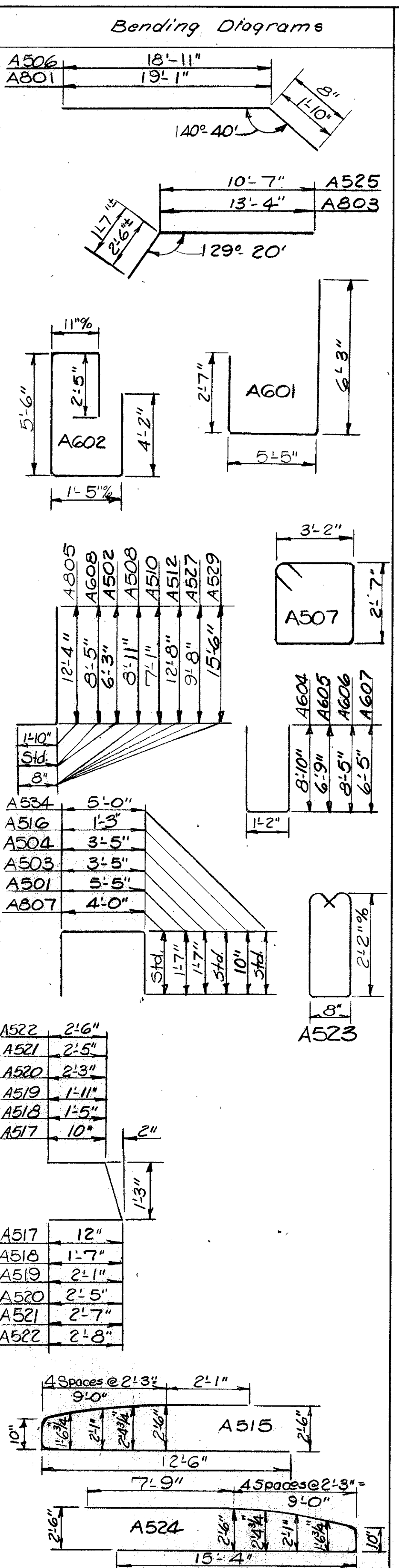
REINFORCING

REINFORCING STEEL LIST

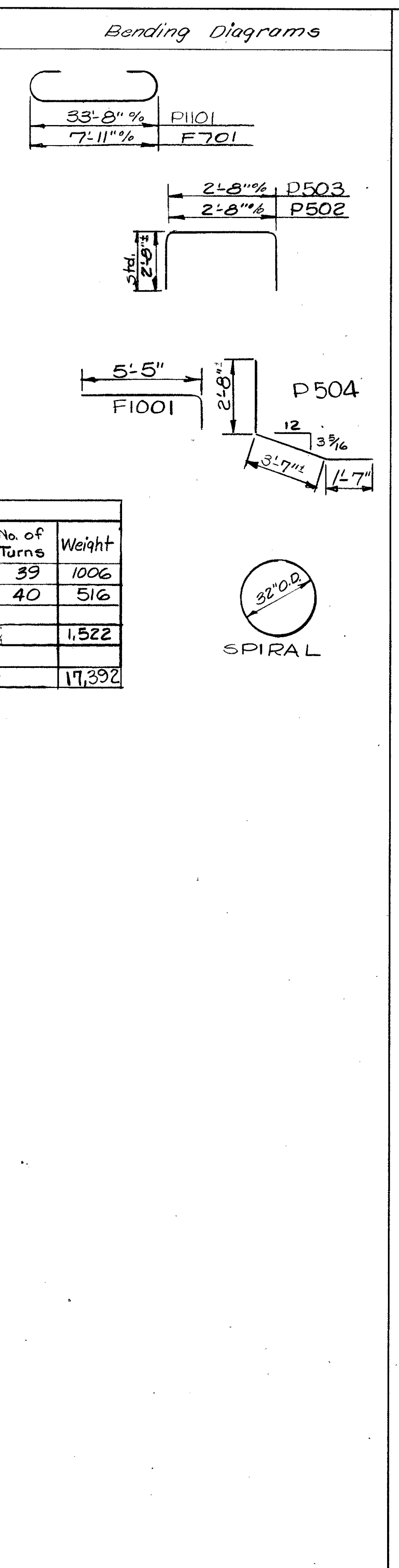
FED. RD. DIVISION	STATE	PROJECT	293-H 344
2	OHIO		

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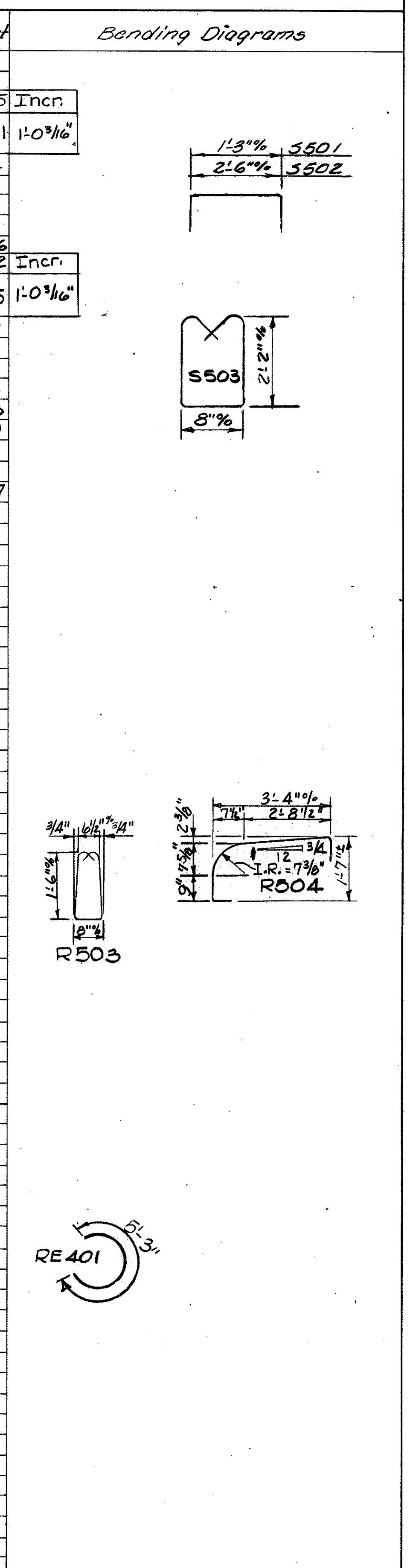
Bar Number	Number Required	Length	Shape	Weight
ONE ABUTMENT				
A801	2	20'-11"		112
A802	12	21'-9"		697
A803	2	15'-10"		85
A804	4	14'-0"		150
A805	2	13'-11"		74
A806	4	11'-3"		120
A807	4	5'-10"		62
A601	26	13'-11"		543
A602	29	13'-10"		603
A603	6	6'-2"		56
A604	7	13'-6"		195
A605	3	14'-4"		65
A606	9	17'-8"		239
A607	3	13'-8"		62
A608	4	9'-1"		55
A501	26	8'-4"		226
A502	26	6'-9"		183
A503	25	6'-4"		165
A504	24	4'-5"		111
A505	27	20'-0"		563
A506	7	19'-7"		143
A507	27	11'-11"		336
A508	3	9'-6"		30
A509	3	8'-11"		28
A510	1	7'-8"		8
A511	1	7'-0"		7
A512	2	13'-2"		27
A513	2	12'-7"		26
A514	42	5'-1"		223
A515	2	24'-2"		50
A516	17	2'-8"		47
A517	2	2'-10"		6
A518	2	4'-0"		8
A519	2	5'-0"		10
A520	2	5'-8"		12
A521	2	6'-0"		13
A522	7	6'-2"		45
A523	22	5'-7"		128
A524	2	32'-8"		68
A525	3	12'-2"		38
A526	3	11'-6"		36
A527	1	10'-2"		11
A528	1	9'-11"		10
A529	2	16'-0"		33
A530	2	15'-9"		33
A531	12	3'-6"		44
A532	4	3'-10"		16
A533	2	4'-6"		9
A534	12	6'-0"		75
TOTAL ONE ABUTMENT				5,886
TOTAL TWO ABUTMENTS				11,772



Bar Number	Number Required	Length	Shape	Weight		
THREE PIERS						
P1101	18	36'-10"		3,523		
P1102	18	26'-3"		2,558		
P1001	40	16'-6"		2,840		
P1002	20	17'-0"		1,463		
P501	6	33'-8"		211		
P502	114	7'-9"		921		
P503	60	3'-8"		229		
P504	12	7'-8"		96		
F1001	60	6'-6"		1,678		
F701	120	9'-7"		2,351		
SUB-TOTAL THREE PIERS				15,870		
SPIRAL REINFORCING						
Bar Number	Number Required	Core Diam.	Length	Pitch	No. of Turns	Weight
SP401	4	32"	13'-4 3/8"	4 1/2"	39	1006
SP402	2	32"	13'-9 3/4"	4 1/2"	40	516
TOTAL SPIRAL						1,522
TOTAL THREE PIERS						17,392



Bar Number	Number Required	Length	Shape	Weight
SUPERSTRUCTURE				
S701	305	29'-8"		18,495
Series S702	2 Series 21 bars to 28'-0"	7'-8"		1,531
S703	12	6'-8"		164
S601	305	29'-8"		13,591
S602	408	36'-4"		22,266
S603	57	32'-6"		2,782
Series S604	25 Series 21 bars to 28'-0"	7'-8"		1,125
S605	12	6'-8"		120
S501	744	2'-3"		1,746
S502	372	3'-6"		1,358
S503	424	5'-7"		2,469
TOTAL SUPERSTRUCTURE				65,647
RAILING STEEL				
R501	128	15'-4"		
R502	16	12'-7"		
R503	12	4'-2"		
R504	8	5'-4"		
R505	None			
R506	None			
R507	8	12'-4"		
R508	8	15'-2"		
REPLACEMENT STEEL				
RE101	1	7'-6"		
RE1001	1	7'-2"		
RE801	1	6'-6"		
RE701	2	6'-2"		
RE601	3	5'-11"		
RE501	1	5'-7"		
RE401	1	5'-3"		



-NOTES-
 BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A501 is a No. 5 size bar and A1001 is a No. 10 size.

RAILING STEEL in the parapet wall is included in Item 517. Railing for payment.

SPIRAL REINFORCING BARS: The Length shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The No. of Turns shown is the length divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1 1/2 closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

BARRETT, GARGO, WITHERS AND ASSOCIATES, LTD.
 Consulting Engineers
 245-249 S. Paint Street Chillicothe, Ohio

REINFORCING STEEL LIST
 BRIDGE NO. MAR-23-1693
 U.S.R.23 UNDERCOUNTY ROAD 26
 MARION COUNTY U.S.R.23
 STA. 891+63.86

SCALE: DATE: 8/25/66

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.H.S.	P.J.M.				8/25/66	